General

Guideline Title

Bosutinib for previously treated chronic myeloid leukaemia.

Bibliographic Source(s)

National Institute for Health and Care Excellence (NICE). Bosutinib for previously treated chronic myeloid leukaemia. London (UK): National Institute for Health and Care Excellence (NICE); 2013 Nov. 67 p. (Technology appraisal guidance; no. 299).

Guideline Status

This is the current release of the guideline.

This guideline meets NGC's 2013 (revised) inclusion criteria.

Recommendations

Major Recommendations

Bosutinib is not recommended within its marketing authorisation for treating Philadelphia-chromosome-positive chronic myeloid leukaemia (CML).

People currently receiving bosutinib that is not recommended for them in National Institute for Health and Care Excellence (NICE) guidance should be able to continue treatment until they and their clinician consider it appropriate to stop.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Philadelphia-chromosome-positive chronic myeloid leukaemia (CML)

Guideline Category

Assessment of Therapeutic Effectiveness

Treatment

Clinical Specialty

Family Practice

Hematology

Internal Medicine

Oncology

Intended Users

Advanced Practice Nurses

Nurses

Physician Assistants

Physicians

Guideline Objective(s)

To evaluate the clinical effectiveness and cost-effectiveness of bosutinib for previously treated chronic myeloid leukaemia (CML)

Target Population

Adult patients 18 years of age and older with chronic phase (CP), accelerated phase (AP) and/or blast phase (BP) chronic myeloid leukaemia (CML) who have failed first-line treatment

Interventions and Practices Considered

Bosutinib

Major Outcomes Considered

- Clinical effectiveness
  - Overall survival
  - Event-free survival
  - Progression-free survival
  - Time to progression
  - Response rates: cytogenetic, haematological and molecular, including time to response and duration of response
  - Time to treatment failure
  - Adverse effects of treatment
  - Health-related quality of life
- Cost-effectiveness

Methodology

Methods Used to Collect/Select the Evidence

Searches of Electronic Databases

Searches of Unpublished Data

Description of Methods Used to Collect/Select the Evidence

Note from the National Guideline Clearinghouse (NGC): The National Institute for Health and Care Excellence (NICE) commissioned an independent academic centre to perform an assessment of the manufacturer's submission on the technology considered in this appraisal and prepare an Evidence Review Group (ERG) report. The ERG report for this technology appraisal was prepared by Peninsula Technology Assessment Group (PenTAG), University of Exeter (see the "Availability of Companion Documents" field).

Clinical Effectiveness

Searches

The manufacturer provided detailed information on the search strategy. The complete search strategy is presented in Appendix B of the ERG report. In summary, the following search approach was used in Pfizer submission:

The following electronic databases were searched:

- MEDLINE (R) In-Process & Other Non-Indexed Citations (searched from 1946 to January 21st 2013)
- Ovid MEDLINE (R) 1946 to present (via OVID; searched from 1946 to January 21st 2013)
- EMBASE, 1980 to present (via OVID; searched from 1974 to January 18th 2013)
- The Cochrane Library (via OVID), searching the following databases: the Cochrane Central Register of Controlled Trials (CENTRAL; searched to December 2012), the Cochrane Database of Systematic Reviews (Cochrane Reviews; searches from 2005 to December 2012), the Database of Abstracts of Reviews of Effects (DARE; searched 4th Quarter 2012), the Health Technology Assessment Database (HTA; searched 4th Quarter 2012), National Health Service (NHS) Economic Evaluation Database (searched 4th Quarter 2012)

The following conference proceedings were searched (2010-2012):

- American Society of Haematology (ASH)
- American Society of Clinical Oncology (ASCO)
- European Haematology Association (EHA)

The searches were run in January 2013. The search strategy for the electronic databases took terms for chronic myeloid leukaemia (CML) and combined this with terms for imatinib (though this was restricted to incidences of intolerance, failure or resistance), hydroxycarbamide, stem cell transplantation, interferon, and bosutinib. A limit to systematic reviews and trials was used for this search. No separate searches were conducted for adverse event (AE). This could have compromised AE information.

The literature searching and search methods were found appropriate to the research question.

Inclusion Criteria

Because of the lack of randomised controlled trial (RCT) evidence, the submission included separate clinical evidence for bosutinib and bosutinib comparators. The following study designs were included:

No RCTs were identified in the systematic review that specifically matched the licensed population for bosutinib. The data on which the license has been derived comes from a single-arm study, Study 200. The Study 200 Clinical Study Report (CSR) provides data across four cohorts of patients recruited separately into the study. In addition, a number of publications and conference abstracts/posters based on Study 200 are also available and are presented in this submission.

Comparators

No studies specifically evaluating comparator treatments in patients for whom imatinib, nilotinib and dasatinib are unsuitable were found. However, the systematic review identified 13 comparator studies that, like bosutinib, considered the use of the comparators in the broad second-line or later populations, in chronic phase (CP), accelerated phase (AP), and blast phase (BP).

Table. Eligibility Criteria Used in Search Strategy

	Inclusion Criteria	Exclusion Criteria
Population	Adult patients (≥18 years) with chronic phase (CP), accelerated phase (AP) and/or blast phase (BP) chronic myeloid leukaemia (CML) who have failed imatinib treatment	
Interventions/Comparators	• Bosutinib • Interferon alpha • Hydroxycarbamide (hydroxyurea) • Stem cell transplant (SCT)	
Outcomes	Efficacy: • Treatment response rates (including molecular, cytogenetic and haematological responses) • Time to and duration of response • Overall survival • Event-free survival • Progression-free survival • Time to treatment failure • Health-related quality of life Safety/Tolerability: • Adverse events (all grades) • Incidence of serious adverse events	
Study Design	• Prospective randomised controlled trials (RCTs) • Observational studies	Single case studies
Language	English abstracts of foreign language publications	Non-English publications

Cost-effectiveness

Search Strategy

The manufacturer conducted two sets of searches to locate cost-effectiveness studies for this submission.

The first search took terms for CML or Philadelphia Chromosome combined with methodological limits to economics/cost studies. These searches were run 2nd October 2012 in the following databases: Ovid MEDLINE, EMBASE, MEDLINE® In-Progress, EconLit, NHS EED, and Cochrane Library.

The manufacturer stated that search results were limited to dasatinib, nilotinib, imatinib, bosutinib, stem-cell, hydroxycarbamide, interferon, or standard care. It is not clear from the submission how this was achieved.

The manufacturer additionally searched proceedings of selected conferences (see Table 38 in the ERG report) (see the "Availability of Companion Documents" field) in February 2013 and NICE HTAs. They report that horizon scans were performed using the Google search engine.

In clarification, the manufacturer confirmed they had updated the submission searches from 2nd October 2012 to April 2013. The searches performed were appropriate to the task.

Inclusion and Exclusion Criteria Used in the Study Selection

Inclusion and exclusion criteria in the cost-effectiveness review are shown in Table 39 of the ERG report (see the "Availability of Companion Documents" field). By excluding studies of first-line tyrosine kinase inhibitors (TKIs) and excluding cost (without assessment of effectiveness) it is possible that studies capable of informing the *de novo* model would be missed, but an additional search was conducted in which the study type criteria were dropped. The ERG members believe the inclusion and exclusion criteria were appropriate to the objective of the cost-effectiveness review.

Number of Source Documents

Clinical Effectiveness

Sixteen studies were identified:

- Three studies reported on bosutinib (all bosutinib studies are related to phase I/II Study 200).
- Thirteen studies reported on comparator treatments.

Cost-effectiveness

- A total of 20 articles were extracted and qualitatively analysed (none on bosutinib).
- The manufacturer submitted an economic model on bosutinib.

Methods Used to Assess the Quality and Strength of the Evidence

Expert Consensus

Rating Scheme for the Strength of the Evidence

Not applicable

Methods Used to Analyze the Evidence

Review of Published Meta-Analyses

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

Note from the National Guideline Clearinghouse (NGC): The National Institute for Health and Care Excellence (NICE) commissioned an independent academic centre to perform an assessment of the manufacturer's submission on the technology considered in this appraisal and prepare an Evidence Review Group (ERG) report. The ERG report for this technology appraisal was prepared by Peninsula Technology Assessment Group (PenTAG), University of Exeter. (See the "Availability of Companion Documents" field.)

Clinical Effectiveness

Critique of Data Extraction

The submission explains the processes used in study selection and data extraction which is in line with the standard review process. The screening of the literature was performed by one reviewer and inclusion and exclusion criteria were verified by a second reviewer. Any disputes were resolved by a third party. The following data extraction strategy was used:

Results from database searches were downloaded into a bespoke Access® database, which was used to manage citation screening. Following full-text review and identification of studies to be included, data was extracted into a Data Extraction Table (DET). The DET included, but was not limited to, the following column headings:

- Country
- Study design
- Number of patients
- Key inclusion and exclusion criteria including subgroups
- Baseline characteristics
- Outcomes
- Likelihood of bias (quality components)

This data extraction was performed by one reviewer and verified by a second party.

Quality Assessment

The manufacturer's quality assessment of Study 200 was performed according to the Chambers (2009) criteria for case series studies. Further information on the quality assessment criteria can be found in Appendix C of the ERG report (see the "Availability of Companion Documents" field).

The most challenging aspect of the Study 200 quality assessment critique is its non-randomised single arm design. The design of single-arm studies makes it difficult to assess and generalise results. Results from non-randomised studies may differ from randomised controlled trial (RCT) evidence and case series design is considered to be the weakest source of clinical effectiveness evidence in the hierarchy of study designs. Study 200 was a multicentre trial and recruited people consecutively, which could reduce the risk of bias. There is no agreed 'gold standard' appraisal tool for the assessment of non-randomised studies. The Cochrane handbook suggests that reviewers should select and modify or develop a tool that is most appropriate to their topic and the study design. Similarly, the Centre for Reviews and Dissemination (CRD) recommends considering the appropriateness of study design to the research objective, risk of bias, other issues related to study quality, choice of outcome measure, statistical issues, quality of reporting, quality of the intervention and generalizability in a quality assessment of any study. Details of the manufacturer's critical appraisal of Study 200 alongside the ERG critique can be seen in Table 13 of the ERG report (see the "Availability of Companion Documents" field).

Statistical Analysis

Analyses of the primary and key secondary outcomes, except for progression-free survival (PFS) and overall survival (OS), were performed using the evaluable population. The evaluable population was defined as all enrolled patients who received at least one dose of bosutinib and had an adequate baseline outcome assessment. Table 14 of the ERG report (see the "Availability of Companion Documents" field) showed the difference between recruited and evaluable populations for chronic myeloid leukaemia (CML) disease phases at different snapshots. OS and adverse events (AEs) were calculated for all patients who received at least 1 dose of bosutinib (the all-treated population). No intention-to-treat analyses or adjustments for multiple comparisons were reported.

See section 4 of the ERG report (see the "Availability of Companion Documents" field) for additional information on clinical effectiveness analysis.

Cost-Effectiveness

Model Structure

The submission includes three cohort models (for patients starting in chronic phase [CP], accelerated phase [AP] and blast phase [BP]). In each model bosutinib is compared with hydroxycarbamide, interferon (CP model only) and stem cell transplant (SCT). The models are described as 'semi-Markov models' but there are no transition probabilities as would be expected from a Markov model. The membership of each state is calculated in a manner similar to that which would be expected in an area-under-the-curve model.

Cycles in the models last one month and a half-cycle correction was not applied.

Bosutinib patients receive bosutinib until they discontinue treatment due to intolerance or resistance, progress to a later disease stage (AP or BP for those in CP, BP for those in AP, not applicable for those in BP), or die. Bosutinib patients receive hydroxycarbamide following bosutinib discontinuation until death (even in the case of further disease progression).

Hydroxycarbamide patients receive hydroxycarbamide regardless of disease progression until death.

Interferon patients receive interferon until they discontinue treatment (similarly to bosutinib patients), progress to a later disease stage (AP or BP), or die. Interferon patients receive hydroxycarbamide following bosutinib discontinuation until death (even in the case of further disease progression).

SCT patients receive SCT and are thereafter regarded as cured in the base case analysis and so do not progress to later disease stages and do not receive drug treatment after SCT.

The models are structured similarly, with time on and off treatment in the initial phase, later disease phases (if applicable) and death. Figure 10 of the ERG report shows the CP model structure, Figure 11 of the ERG report shows the AP model structure and Figure 12 shows the BP model structure (see the "Availability of Companion Documents" field).

See Section 5 of the ERG report (see the "Availability of Companion Documents" field) for additional information on cost-effectiveness.

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

Considerations

Technology appraisal recommendations are based on a review of clinical and economic evidence.

Technology Appraisal Process

The National Institute for Health and Care Excellence (NICE) invites 'consultee' and 'commentator' organisations to take part in the appraisal process. Consultee organisations include national groups representing patients and carers, the bodies representing health professionals, and the manufacturers of the technology under review. Consultees are invited to submit evidence during the appraisal and to comment on the appraisal documents.

Commentator organisations include manufacturers of the products with which the technology is being compared, the National Health Service (NHS) Quality Improvement Scotland and research groups working in the area. They can comment on the evidence and other documents but are not asked to submit evidence themselves.

NICE then commissions an independent academic centre to review published evidence on the technology and prepare an 'assessment report'. Consultees and commentators are invited to comment on the report. The assessment report and the comments on it are then drawn together in a document called the evaluation report.

An independent Appraisal Committee then considers the evaluation report. It holds a meeting where it hears direct, spoken evidence from nominated clinical experts, patients and carers. The Committee uses all the evidence to make its first recommendations, in a document called the 'appraisal consultation document' (ACD). NICE sends all the consultees and commentators a copy of this document and posts it on the NICE Web site. Further comments are invited from everyone taking part.

When the Committee meets again it considers any comments submitted on the ACD; then it prepares its final recommendations in a document called the 'final appraisal determination' (FAD). This is submitted to NICE for approval.

Consultees have a chance to appeal against the final recommendations in the FAD. If there are no appeals, the final recommendations become the basis of the guidance that NICE issues.

Who Is on the Appraisal Committee?

NICE technology appraisal recommendations are prepared by an independent committee. This includes health professionals working in the NHS and people who are familiar with the issues affecting patients, and carers. Although the Appraisal Committee seeks the views of organisations representing health professionals, patients, carers, manufacturers and government, its advice is independent of any vested interests.

Rating Scheme for the Strength of the Recommendations

Not applicable

Cost Analysis

Summary of Appraisal Committee's Key Conclusions

Availability and Nature of Evidence

Data on survival for bosutinib and the comparator treatments and the relative treatment effect between bosutinib and the comparators was subject to uncertainty.

The Committee considered the extension to life criterion, taking into account its conclusions on the uncertainties relating to the lack of comparative evidence.

Uncertainties Around and Plausibility of Assumptions and Inputs in the Economic Model

The manufacturer's model resulted in the length of time a person received hydroxycarbamide after bosutinib in the bosutinib arm being greater than the overall survival with hydroxycarbamide in the hydroxycarbamide arm in all disease phases.

For chronic phase chronic myeloid leukaemia (CML) the overall survival estimate was made from a surrogate outcome. The resulting increased survival on hydroxycarbamide after bosutinib, which resulted from the manufacturer's surrogate outcome modelling approach, meant that the manufacturer ascribed a considerable post-treatment benefit to bosutinib in chronic phase CML. The Committee agreed that the overall survival estimate, derived from both the manufacturer's surrogate outcome approach and the assumed substantial post-treatment effect of bosutinib after its discontinuation, needed careful interrogation.

The Committee considered that, with the Evidence Review Group (ERG)'s cumulative survival approach, overall survival in the bosutinib arm was assumed to be dependent on the time on treatment with bosutinib and the estimate for survival on hydroxycarbamide after bosutinib. The Committee concluded that the key to determining whether the manufacturer or the ERG's modelling assumptions were more likely to reflect survival with bosutinib in clinical practice were (1) the overall survival estimates for bosutinib and hydroxycarbamide after bosutinib and (2) whether a post-treatment benefit would be expected with bosutinib.

Incorporation of Health-Related Quality-of-Life Benefits and Utility Values. Have Any Potential Significant and Substantial Health-Related Benefits Been Identified That Were Not Included in the Economic Model, and How Have They Been Considered?

None

Are There Specific Groups of People for Whom the Technology Is Particularly Cost-Effective?

Not applicable

What Are the Key Drivers of Cost-Effectiveness?

The Committee concluded that the key to determining whether the manufacturer or the ERG's modelling assumptions were more likely to reflect survival with bosutinib in clinical practice were (1) the overall survival estimates for bosutinib and hydroxycarbamide after bosutinib and (2) whether a post-treatment benefit would be expected with bosutinib.

The Committee remained aware of the ERG's estimate of £135,000 per quality-adjusted life year (QALY) gained for the incremental cost-effectiveness ratio (ICER) of bosutinib compared with best supportive care if bosutinib is continued until transformation. Although it considered that the consultation comments about (1) not continuing bosutinib all the way to transformation and (2) taking into account the costs of another failed tyrosine kinase inhibitor would bring this estimate closer to the ERG's exploratory base case of £49,000, it would not lower the ICER entirely to this value.

Most Likely Cost-Effectiveness Estimate (Given as an ICER)

For chronic phase CML the most plausible available ICER was £43,000 per QALY gained, but taking into account the limited potential for post-bosutinib benefit and a proportion of people taking bosutinib after loss of complete cytogenetic response an estimated range of £40,000 to £50,000 was appropriate for the purposes of its decision making.

For accelerated phase CML and blast phase CML the most plausible ICERs were £58,000 per QALY gained and £60,000 per QALY gained respectively.

See sections 3 and 4 in the original guideline document for additional information.

Method of Guideline Validation

External Peer Review

Description of Method of Guideline Validation

Consultee organisations from the following groups were invited to comment on the draft scope, Assessment Report and the Appraisal Consultation Document (ACD) and were provided with the opportunity to appeal against the Final Appraisal Determination.

- Manufacturer/sponsors
- Professional/specialist and patient/carer groups

- Commentator organisations (without the right of appeal)

In addition, individuals selected from clinical expert and patient advocate nominations from the professional/specialist and patient/carer groups were also invited to comment on the ACD.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of evidence supporting the recommendations is not specifically stated.

The Appraisal Committee considered clinical and cost-effectiveness evidence submitted by the manufacturer of bosutinib and a review of this submission by the Evidence Review Group. For clinical effectiveness, one non-randomised single-arm study was the main source of evidence. For cost-effectiveness, the manufacturer's economic model was considered.

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Appropriate recommendation for the use of bosutinib for previously treated chronic myeloid leukaemia (CML)

Potential Harms

The summary of product characteristics lists the following adverse reactions for bosutinib: diarrhoea, nausea, thrombocytopenia (low platelet counts), vomiting, abdominal pain, rash, anaemia (low red blood cell counts), pyrexia (fever) and increased levels of liver enzymes. The most serious adverse effects (which may affect more than 1 in 20 people) are thrombocytopenia, anaemia, diarrhoea and rash as well as neutropenia (low levels of neutrophils, a type of white blood cell) and increased levels of liver and digestive enzymes.

For full details of adverse reactions and contraindications, see the summary of product characteristics.

Contraindications

Contraindications

For full details of adverse reactions and contraindications, see the summary of product characteristics.

Qualifying Statements

Qualifying Statements

- This guidance represents the views of the National Institute for Health and Clinical Excellence (NICE) and was arrived at after careful consideration of the evidence available. Healthcare professionals are expected to take it fully into account when exercising their clinical judgement. However, the guidance does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.
- Implementation of this guidance is the responsibility of local commissioners and/or providers. Commissioners and providers are reminded that it is their responsibility to implement the guidance, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity and foster good relations. Nothing in this guidance should be interpreted in a way that would be inconsistent with compliance with those duties.

Implementation of the Guideline

Description of Implementation Strategy

The National Institute for Health and Care Excellence (NICE) has developed a costing statement to help organisations put this guidance into practice. This is available from the NICE Web site (see also the "Availability of Companion Documents" field).

Implementation Tools

Mobile Device Resources

Patient Resources

Resources

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Living with Illness

IOM Domain

Effectiveness

Patient-centeredness

Identifying Information and Availability

Bibliographic Source(s)

National Institute for Health and Care Excellence (NICE). Bosutinib for previously treated chronic myeloid leukaemia. London (UK): National Institute for Health and Care Excellence (NICE); 2013 Nov. 67 p. (Technology appraisal guidance; no. 299).

Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2013 Nov

Guideline Developer(s)

National Institute for Health and Care Excellence (NICE) - National Government Agency [Non-U.S.]

Source(s) of Funding

National Institute for Health and Care Excellence (NICE)

Guideline Committee

Appraisal Committee

Composition of Group That Authored the Guideline

Committee Members: Professor Andrew Stevens (*Chair of Appraisal Committee C*), Professor of Public Health, University of Birmingham; Professor Eugene Milne (*Vice Chair of Appraisal Committee C*), Deputy Regional Director of Public Health, North East Strategic Health Authority, Newcastle upon Tyne; Dr David Black, Medical Director, NHS South Yorkshire and Bassetlaw; Dr Daniele Bryden, Consultant in Intensive Care Medicine and Anaesthesia, Sheffield Teaching Hospitals NHS Trust; Dr Andrew Burnett, Formerly Director for Health Improvement and Medical Director, NHS Barnet, London; David Chandler, Lay Member; Gail Coster, Advanced Practice Sonographer, Mid Yorkshire Hospitals NHS Trust; Professor Peter Crome, Honorary Professor, Department of Primary Care and Population Health, University College London; Dr Maria Dyban, General Practitioner, Kings Road Surgery, Cardiff; Professor Rachel A Elliott, Lord Trent Professor of Medicines and Health, University of Nottingham; Dr Wasim Hanif, Consultant Physician and Honorary Senior Lecturer, University Hospital Birmingham; Dr Alan Haycox, Reader in Health Economics, University of Liverpool Management School; Dr Peter Jackson, Clinical Pharmacologist, University of Sheffield; Emily Lam, Lay Member; Dr Allyson Lipp, Principal Lecturer, University of Glamorgan; Dr Claire McKenna, Research Fellow in Health Economics, University of York; Professor Gary McVeigh, Professor of Cardiovascular Medicine, Queen's University Belfast and Consultant Physician, Belfast City Hospital; Dr Grant Maclaine, Director, Health Economics and Outcomes Research, BD, Oxford; Dr Andrea Manca, Health Economist and Senior Research Fellow, University of York; Henry Marsh, Consultant Neurosurgeon, St George's Hospital, London; Dr Paul Miller, Director, Payer Evidence, AstraZeneca UK Ltd; Dr Anna O'Neill, Deputy Head of Nursing and Healthcare School/Senior Clinical University Teacher, University of Glasgow; Alan Rigby, Academic Reader, University of Hull; Dr Peter Selby, Consultant Physician, Central Manchester University Hospitals NHS Foundation Trust; Professor Matt Stevenson, Technical Director, School of Health and Related Research, University of Sheffield; Dr Tim Stokes, Senior Clinical Lecturer, University of Birmingham; Dr Paul Tappenden, Reader in Health Economic Modelling, School of Health and Related Research, University of Sheffield; Dr Judith Wardle, Lay Member

Financial Disclosures/Conflicts of Interest

Committee members are asked to declare any interests in the technology to be appraised. If it is considered there is a conflict of interest, the member is excluded from participating further in that appraisal.

Guideline Status

This is the current release of the guideline.

This guideline meets NGC's 2013 (revised) inclusion criteria.

Guideline Availability

Electronic copies: Available from the National Institute for Health and Care Excellence (NICE) Web site .

Availability of Companion Documents

The following are available:

- Bosutinib for previously treated chronic myeloid leukaemia. Costing statement. London (UK): National Institute for Health and Care Excellence (NICE); 2013 Nov. 4 p. (Technology appraisal 299). Electronic copies: Available in Portable Document Format (PDF) from the National Institute for Health and Care Excellence (NICE) Web site .
- Hoyle M, Snowsill T, Haasova M, Cooper C, Rudin C. Bosutinib for previously treated chronic myeloid leukaemia: a single technology appraisal. Exeter (UK): PenTAG, University of Exeter; 2013. 304 p. Electronic copies: Available in PDF from the NICE Web site .

Patient Resources

The following is available:

- Bosutinib for previously treated chronic myeloid leukaemia. Information for the public. London (UK): National Institute for Health and Care Excellence (NICE); 2013 Nov. (Technology appraisal 299). Electronic copies: Available from the National Institute for Health and Care Excellence (NICE) Web site . Also available for download as a Kindle or EPUB ebook from the NICE Web site .

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC Status

This NGC summary was completed by ECRI Institute on February 6, 2014.

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